REMARKS

Claims 18-39 are pending and stand rejected as anticipated under 35 U.S.C. § 102(e) over the disclosure of U.S. Patent No. 6,140,394 ("Kamiyama"). Anticipation requires that each element of a claim be disclosed explicitly or inherently in a single piece of prior art. Because Kamiyama fails to disclose either literally or by inherency the claimed ratio of filler particle size to polymer particle size, it cannot anticipate claims 18-39.

Each rejected claim requires a ratio of filler particle size to synthetic organic polymer particle size of 1.1:1 to 20:1. There is no question that Kamiyama absolutely fails to disclose this ratio. The only ratio Kamiyama mentions at all is the ratio of disperse to continuous phase in the reaction mixture.[1] Kamiyama does disclose polymer particle size ranges of 5-50 µm (col. 1, lines 15-16), not larger than 30 µm (col. 6, lines 11-12), and 2-3 µm (col. 6, line 15). In Examples 1-4 and corresponding Figures 3-6, 8, and 9, polymer particles in the range of 0.5-20 µm with average sizes of 5-7 µm are found. "Fine silica powder" is disclosed as a useful suspension stabilizer, "fine" being the only indication of size. Col. 6, lines 43-45.

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[1] U.S. Patent No. 6,140,394, col. 2, lines 11-14 ("the ratio between disperse and continuous phases in the reaction solution"), col. 3, line 56-60 ("the ratio of disperse to continuous phase [is] placed under precise control to insure that both the disperse phase and continuous phases (phase ratio) are subjected to shear force under conditions that are kept constant"), col. 9, lines 26-29 ("the ratio of disperse to continuous phase"), col. 11, lines 10-15 ("the ratio of disperse to continuous phase"), col. 12, lines 24-25 ("the ratio of the two phases").

Without explicit disclosure of the claimed ratio or the sizes necessary to calculate a ratio of filler particle size to synthetic organic polymer particle size in the prior art, it has been argued in support of this rejection:

> Although Kamiyama et al. are silent on the exact dimension of the inorganic powder disclosed, however, it is well-recognized that the disclosed "powder" of Kamiyama et al. is referring to a size range of at least 200 microns. Further, according to Kamiyama et al. (Fig. 3-6), the polymer particles of Kamiyama et al. ranges from 1 to 20 microns, 0.5 to 50 microns (col. 6, line 1-14), or higher (col. 9, line 28-36; col. 10, line 42 to col. 12, line 66). Therefore, in view of the particle sizes of the filler and the polymer particles disclosed, the examiner has a reasonable basis that the claimed "ratio of a particle size of the filler particles to a particle size of a polymer particles is in the range from 1.1:1 to 20:1" is inherently possessed in Kamiyama et al.

Office Action 5 April 2006 at page 5-6.[2]

Inherency is established only where a claimed characteristic or element that is not described in the reference necessarily and inevitably results from the teachings of the prior art. To rely upon a theory of inherency, the Examiner must provide a basis in fact or technical reasoning to show that the allegedly inherent characteristics necessarily flow from the cited art. *Ex parte Levey*, 17 U.S.P.Q.2d 1461 (BPAI 1990). Inherency must be a necessary result, not merely a possible result. *In re Oelrich,* 666 F.2D 578, 212 U.S.P.Q. 323 (CCPA 1981); *Ex parte Keith*, 154 U.S.P.Q. 320 (POBA 1961). See also, *In re Robertson*, 49 U.S.P.Q.2d 1949, 1951 (Fed. Cir. 1999).

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[2] Kamiyama discloses nothing about polymer particle sizes at all at column 9, lines 28-36, and nothing about "higher" particle sizes at column 10, line 42 to column 12, line 66 (polymer particles in the range of about 5 μm). The phrase "in view of the particle sizes of the filler . . . disclosed" is particularly misleading since Kamiyama in fact discloses no size at all for filler particles.

The reference does not explicitly describe the claimed ratio of sizes, or even individual sizes from which such a ratio could be calculated, and so the rejection fills the gap by presuming that the inorganic additive powders of Kamiyama have a size of at least 200 microns so that the particle size ratio as claimed is present. In fact, silica powders are known to have typical particle sizes well above and below 200 microns, as applicants' evidence of record demonstrates. The full range of filler particle sizes disclosed in art of record falls well below 100 microns and goes as low as 0.01 microns (*See, e.g.,* EP 718 329 at page 3, lines 11-13; U.S. 4,608,401 at col. 10, lines 48-54; U.S. 4,272,424 at col. 4, lines 40-43).[3] Nothing in Kamiyama leads to, much less demands, the particle size of at least 200 microns necessary to establish inherency. Since the particular size of at least 200 microns is not inevitable from what Kamiyama discloses, it is manifestly unreasonable to conclude the claimed particle size ratio is inherent.

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[3] In view of the relatively large size of 200 microns relied upon to reject the claims, one of skill would likely conclude that the "fine" powders of Kamiyama refer to sizes far less than 200 microns.

To this the P.T.O. has responded:

> Regarding applicants' argument that "powder" can be extended to encompass particle sizes that are above and below 200 microns, however, applicants must recognize that argued "powder" still encompass the particle sizes that are above 200 microns. According to applicants' submitted literature on METSO® Sodium Metasilicate, most of the disclosed sodium metasilicate product can go through a Tyler Screen size of from 10 to 100 mesh. Applicants must recognize that a 100 mesh is equivalent to particle size of 170 microns; 65 mesh is equivalent to 282 microns; 40 mesh is equivalent to 470 microns; 20 mesh is equivalent to 1041 microns; and 10 mesh is equivalent to 2000 microns. In view of applicants' submitted literature on METSO®, the inherency where the "powder" full embraces particle size of greater than 200 microns set forth from the non-final rejection of April 5, 2006 is proper.

Final Action 9 November 2006 at page 4.

The first problem with this argument is its imprecise and misleading use of the word "encompass." What is meant by this word as used in the rejection is not clear, and since applicants have not used it in their arguments, it is misleading to refer to "applicants' argument that "powder" can be extended to encompass particle sizes that are above and below 200 microns." Applicants never made such an argument. The question here is not what is "encompassed," but what does the art *disclose or describe* to one of ordinary skill?

What is clear from the record is that Kamiyama discloses *no* ratio of filler and polymer particle sizes and *no* filler particle size at all. The record is also clear that the known sizes of filler particle sizes, including silica powders, lie both well below and well above the size range the rejection has arbitrarily determined is necessary to meet the claims. The size data cited in the rejection for PQ Corporation's Metso® sodium metasilicate beads is only one part of what the record contains. Indeed, on the very document from which the single example cited in the rejection was drawn, there are disclosed silica powders of sizes up to about 2000 microns down to powders having 90% by weight less than 150 microns. The Cabot Corporation Cab-O-Sil® fumed silica has an average particle length of 0.2-0.3 microns. C-E Minerals' TECO-SIL® fused silicas are all less than 100 microns down to less than 5 microns. The patents of record describe inorganic fillers even smaller. The fact that such a selection from outside Kamiyama's disclosure is necessary to reach the claims demonstrates that the selected matter is not inevitable and therefore not inherent in Kamiyama. The rejection for anticipation by inherency over Kamiyama is wrong and should be withdrawn.

CONCLUSION

In view of the amendments and remarks above, Applicants ask for reconsideration and allowance of all pending claims. Should any fees be due for entry and consideration of this Amendment that have not been accounted for, the Commissioner is authorized to charge them to Deposit Account No. 12-2135.

Respectfully submitted,

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